

## CHAPTER 164. EVALUATE A PART 145 REPAIR STATION AND QUALITY CONTROL MANUAL OR REVISION

### SECTION 1. BACKGROUND

#### 1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

*A. Maintenance:* 3230, 3371, 3372

*B. Avionics:* 5230, 5371, 5372

**3. OBJECTIVE.** This chapter provides guidance for evaluating, accepting, or rejecting all Title 14 of the Code of Federal Regulations (14 CFR) part 145 repair station and/or quality control manual original submissions or revisions.

#### 5. GENERAL.

*A.* Before issuing an Air Agency Certificate, the applicant's repair station and/or quality control manual must reflect the applicant's current procedures and be acceptable to the Federal Aviation Administration (FAA).

**NOTE: If the training program required by part 145, § 145.163 is included in either of these manuals, that portion must be FAA-approved. The training program requirement is not effective until April 6, 2005.**

*B.* When a certificate holder revises an existing manual, the FAA must also accept the revisions.

*C.* The manuals submitted by a certificate holder or applicant may be separate or may be combined into a single manual. The format should be consistent and all regulatory requirements must be included. The aviation safety inspector (ASI) must ensure the procedures used in the performance of maintenance, preventive maintenance, or alterations are reflected accurately in the manuals. It is expected that, to fully describe the repair station's inspection/quality system, there will be some procedures that may not be regulatory.

*D.* When evaluating a manual as part of an original certification, each entire manual will be submitted prior to certification. If this task is performed as a revision, only the portion of the manual that is revised must be submitted.

*E.* Each certificated repair station must maintain a current repair station and quality control manual.

*F.* A certificated repair station's current repair station/quality control manual must be accessible for use by repair station personnel. All repair station employees on all shifts must have access to the manual, regardless of the media used (electronic, CD-ROM, etc.).

*G.* A certificated repair station must provide to its certificate-holding district office (CHDO) the current repair station/quality control manual in a format acceptable to the FAA. If the manual or manuals submitted are in electronic media format, they must be compatible with FAA electronic capabilities and free of any programs that would adversely affect that capability.

*H.* There are some recommendations included in this handbook referenced from Advisory Circular (AC) 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals, that are not required by the regulations. They have been included to assist the inspector and certificate holder/applicant in developing a more complete description of the repair station's overall functions, responsibilities, and quality control procedures.

*I.* For certificate holders under parts 121, 125, and 135, and for foreign air carriers or foreign persons operating a U.S.-registered aircraft in common carriage under part 129, maintenance, preventive maintenance, and alterations must be performed in accordance with applicable sections of that air carrier's manuals.

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## SECTION 2. PROCEDURES

### 1. PREREQUISITES AND COORDINATION REQUIREMENTS.

#### A. Prerequisites:

- Knowledge of the regulatory requirements of 14 CFR part 145
- Successful completion of the Airworthiness Inspector Indoctrination course(s) or equivalent
- Successful completion of the Airworthiness Inspection/Surveillance of Foreign/Domestic Repair Stations Course and the on-the-job training (OJT) program related to part 145

B. *Coordination.* This task may require coordination with other specialties, regions, or district offices.

### 3. REFERENCES, FORMS, AND JOB AIDS.

#### A. References:

- 14 CFR parts 1, 39, 43, 65, 91, 121, 125, 129, 135, 145, and SFAR 36
- AC 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals
- FAA Order 8300.10, Airworthiness Inspector's Handbook, vol. 2, ch. 162, 163, and 165

B. *Forms.* None.

C. *Job Aids.* None.

### 5. REPAIR STATION MANUAL PROCEDURES.

A. Receive the certificate holder or applicant's manual or revision as required by §§ 145.51, 145.207, and 145.211(c).

B. Review the submitted manual or revision to ensure that it meets the regulatory requirements of §§ 145.209 and 145.211. The manual or revision must include the following:

(1) An organizational chart that identifies:

- (a) Each management position with authority to act on behalf of the repair station.
  - The organizational chart required by § 145.209 may identify management positions by title only

- Management includes, but is not limited to, the executive functions of planning, organizing, coordinating, directing, controlling, and supervising
- This does not eliminate the requirement in § 145.51 for an applicant to submit the names and titles of its management and supervisory personnel at the time of application

(b) The area of responsibility assigned to each management position, which is the area(s) in the repair station that the manager is directly accountable for and maintains decision authority over.

(c) The duties, responsibilities, and authority of each management position.

(2) Procedures for maintaining and revising the rosters required by § 145.161.

**NOTE: Within five business days of the revision, the rosters required by this section must reflect changes caused by termination, reassignment, change in duties, scope of assignment, or addition of personnel.**

(3) A description of a repair station's operations describing how the maintenance is to be performed, where it would start, and how it progresses through the entire repair cycle for approval for return to service. Also include:

(a) A description of the housing may include dimensions, construction method, heating and ventilation systems, lighting, door openings, and physical address.

(b) A description of the facilities that describes how the shop, hangar, or other work areas are laid out.

(c) A description of the equipment, tooling, and materials used to perform maintenance.

**NOTE: The "description of materials used to perform maintenance" should not be a physical description of the material, but rather an explanation of the repair station's handling and storage of the materials. If materials require specific environmental controls or cannot be stored next to certain chemicals or solvents, these should be identified. For**

**example, it would not be acceptable to store oxygen equipment near petroleum products.**

- If the repair station does not own the equipment, procedures must be included in the manual that describe how the equipment will be obtained (lease, rentals, etc.). The manual must also include where the equipment will be used, how personnel will be trained to use the equipment, and how the repair station will ensure calibration issues, if any, are addressed after transporting the equipment.
- If the repair station chooses to use equipment, tools, or materials other than those recommended by the manufacturer, the manual must include a procedure used by the repair station to determine the equivalency of that equipment, tool, or material.

**NOTE: When the repair station is adding a rating, or an applicant has applied for certification, all required equipment for the rating it seeks must be in place for inspection by the FAA. This provides the ASI with the opportunity to evaluate its placement and use and to verify that repair station personnel are trained to operate it.**

(4) Capability list procedures used to:

(a) Revise the capability list provided in § 145.215 and notify the CHDO of revisions to the list, including how often the CHDO will be notified of revisions; and

(b) Develop and perform the self-evaluation required by § 145.215(c) for revising the capability list, including the methods and frequency of such evaluations and procedures for reporting the results to the appropriate manager for review and action.

(5) Procedures for revising the training program and submitting revisions to the CHDO for approval, which should include:

(a) The title of the person authorized to make a training program revision.

(b) The method of submitting a revision (electronic, hard copy, disk, etc.).

(c) A procedure for recording a revision and a method of identifying the revised material or text.

**NOTE: The training program does not go into effect until April 6, 2005. Manuals without the training program included must be accepted until guidance is issued and a revision to this chapter is completed.**

(6) Procedures for accomplishing work performed at a location other than the repair station's fixed location, which should contain the following:

(a) Title of the person responsible for determining the location is appropriate for the work to be performed.

(b) Title of the person responsible for initiating such work and assigning the personnel necessary to perform inspections and supervise the work.

(c) Procedures for communication between responsible repair station personnel at the fixed location and the maintenance personnel working away from the station. This should include the transfer of parts, supplies, tools/equipment, technical data, and trained personnel.

(d) Procedures that will be used away from the repair station if they deviate from established procedures used at the fixed location. The repair station must ensure that all work performed while exercising the privileges of its certificate are accomplished per the appropriate maintenance manual and its repair station or quality control manual. The determination for performing work at another location must meet the following requirements:

- The work is necessary due to a special circumstance, such as a one-time occurrence, as determined by the FAA; or
- It is necessary to perform such work on a recurring, but not continuous, basis and the repair station's manual includes the procedures for accomplishing maintenance, preventive maintenance, alterations, or specialized services at a place other than the repair station's fixed location.

**NOTE: The FAA determination must be made prior to the performance of any maintenance, preventive maintenance, or alterations away from the repair station's fixed location unless**

**an acceptable procedure is included in the manual.**

(7) Procedures for performing maintenance, preventive maintenance, and alterations for certificate holders under parts 121, 125, and 135 and for foreign air carriers or foreign persons operating a U.S.-registered aircraft in common carriage under part 129.

(a) The FAA requires that maintenance under a continuous airworthiness maintenance program (CAMP) be performed in accordance with the operator's manual. It is the operator's responsibility to ensure the work performed on its behalf is done in accordance with the approved maintenance program.

(b) The certificated repair station that performs maintenance, preventive maintenance, or alterations for an air carrier or commercial operator that has a CAMP under part 121 or part 135 must follow the air carrier or commercial operator's maintenance program or applicable sections of its maintenance manual.

(c) A certificated repair station that performs inspections for a certificate holder conducting operations under part 125 must follow the operator's FAA-approved inspection program.

(d) A certificated repair station that performs maintenance, preventive maintenance, or alterations for a foreign air carrier or foreign person operating a U.S.-registered aircraft under part 129 must follow the operator's FAA-approved maintenance program.

(e) The FAA may authorize a certificated repair station to perform line maintenance on any aircraft of an air carrier certificated under part 121 or 135, or of a foreign air carrier or foreign person operating a U.S.-registered aircraft in common carriage under part 129, provided the certificated repair station:

- Has the appropriate ratings to perform the maintenance or preventive maintenance on transport-category aircraft;
- Performs such line maintenance in accordance with the operator's manual and approved maintenance program;
- Has the necessary equipment, trained personnel, and technical data to perform such line maintenance; and

- Has operations specifications that include an authorization to perform line maintenance.

**NOTE: A repair station must be appropriately rated to perform line maintenance for an air carrier. This would normally require an airframe rating to accomplish scheduled checks, daily inspections, or servicing of articles. However, a repair station with the appropriate ratings may accomplish unscheduled maintenance and repairs. This could include avionics facilities limited to avionics functions such as troubleshooting electrical or electronic systems or replacing defective electronic articles.**

(8) Procedures for maintaining and revising the contract maintenance information, including the submission of revisions to the CHDO for approval and how often the FAA will be notified of revisions.

(a) The FAA must approve the maintenance functions contracted to non-certificated providers.

(b) The repair station must maintain a list of each facility that it contracts maintenance functions with, including the type of certificate and ratings, if any, held by each facility.

(c) The maintenance function list need not be included in the manual, but the manual should include the location or office where the list is maintained.

**NOTE: Maintenance functions are a step or series of steps in the process of performing maintenance, preventive maintenance, or alterations which result in approving an article for return to service. It is not the intent of this rule to create "virtual repair stations" that provide only an approval for return to service. ASIs must evaluate the amount of work a repair station desires to contract out versus the work that is performed in-house.**

(9) A description of the recordkeeping system used by the repair station to obtain, store, and retrieve the records required by part 43. These records must be in English.

(10) Procedures for revising the repair station's manual and notifying its CHDO of revisions to the manual, including how often the FAA will be notified of revisions. The procedure must include:

(a) The title of the person authorized to make a revision.

(b) The method of submitting a revision (electronic, hard copy, disk, etc.).

(c) A procedure for recording a revision and a method of identifying the revised material or text.

(d) A description of the system used to identify and control sections of the repair station manual.

(11) Procedures for submitting malfunction or defect reports in a format acceptable to the FAA, and for notifying the CHDO. If the repair station performs maintenance, preventive maintenance, or alterations for an air carrier, the manual must describe how it will notify the operator.

(12) Procedures for detecting and reporting suspected unapproved parts.

## 7. QUALITY CONTROL MANUAL PROCEDURES.

**NOTE: The quality control manual may be separate from the repair station manual or included in that manual as a separate section or volume.**

A. A certificated repair station must prepare and keep current a quality control manual in a format acceptable to the FAA. Depending upon the size, complexity, and rating(s) of the repair station, that manual should include a description of the system and procedures used for:

(1) Receiving and documenting articles, standard parts, and raw materials.

(2) Performing incoming inspections of raw materials and standard parts that check for:

- Proper documentation, identification, and traceability
- Conformity to a specification and acceptable quality
- Shelf life
- Contamination
- Shipping damage
- State of preservation

(3) Performing preliminary inspection of all articles that are maintained or altered to check for:

- Proper documentation, identification, and traceability

- Shipping damage and contamination
- State of preservation
- Life limits
- Airworthiness Directives and service bulletins
- Functional test or tear down inspections
- FAA approval of new articles
- Determination of what repairs are necessary

(4) Inspecting all articles that have been involved in an accident for hidden damage before maintenance, preventive maintenance, or alteration is performed. Ensure that items are disassembled as necessary and inspected for hidden damage in adjacent areas.

(5) Performing in-progress inspections to ensure inspections, testing, and/or calibration is conducted at various stages while the work is in progress.

(6) Performing final inspections and approvals for return to service.

- Ensures the inspection, testing, and/or calibration of articles, including documentation, is accomplished at the completion of maintenance or alteration
- The manual must include a procedure for approval for return to service

(7) Ensuring continuity of inspection responsibility.

- Include procedures for ensuring that the responsibilities of any inspector are properly performed in their absence
- If the repair station has multiple shifts, include procedures to ensure the continuing responsibility for maintenance in progress through the use of a status book, shift turnover log, or similar documents

(8) Calibrating measuring and test equipment used in maintaining articles, including the intervals at which the equipment will be calibrated.

(9) Taking corrective action on deficiencies related to repair station operation.

(a) Part 145, § 145.211(c)(1)(ix) states that the quality control manual must include procedures used for taking corrective action on deficiencies. A corrective action is taken to remedy an undesirable situation. The correction of deficiencies is normally an integral part of a repair station's improvement process, and could include revisions to procedures that were not working properly (reference AC 145-9, paragraph 4-13 for additional guidance).

**NOTE: The repair station is not required at this time to have an internal evaluation program, quality assurance program, or a continuous improvement program.**

(b) Corrective action requires that a fact-based investigation determine the root cause or causes to eliminate them. Corrective action would be applicable in two situations: Before the article is approved for return for service and after the article has been approved for return to service.

(c) If a deficiency is found before the article is approved for return to service, the repair station should follow its procedures describing how rework will be accomplished. If the deficiency is noted after the article is approved for return to service, the repair station should follow its procedures to notify the CHDO and the owner/operator of any potential problems and recall any unairworthy product. The objective of the investigation into the cause of the deficiency and the corrective actions taken is to prevent a recurrence of the same or similar problems.

**NOTE: When the CHDO receives notification of a deficiency found *after* the article is approved for return to service, it shall be reported to the Suspected Unapproved Parts Program Office, AVR-20, on FAA Form 8120-11, Suspected Unapproved Parts Report. Refer to FAA Order 8120.10, Suspected Unapproved Parts Program, or AVR-20's Intranet site at <http://intranet.faa.gov/avr/sup/index.cfr> for additional information.**

(d) The procedures in the quality control manual should include a system for documenting any deficiencies and the corrective actions taken to prevent a recurrence. The system should let employees track any open corrective action requests and the date the corrective action is due. The program should also be tracked to include audits of the corrective action(s) taken to ensure it was effective. These audits should

also be tracked to ensure that they are completed in a timely fashion.

(10) Establishing and maintaining proficiency of inspection personnel.

(a) The procedure should ensure that inspection personnel are familiar with the applicable regulations and are proficient at inspecting the articles they are assigned to inspect.

(b) Testing, formal training, recurrent training, or a combination of these methods could be used to maintain the proficiency of inspection personnel.

(11) Establishing and maintaining current technical data for maintaining articles.

(12) Revising the repair station's quality manual and notifying its CHDO of revisions to the manual, including how often the FAA will be notified of revisions. The procedure must include:

(a) The title of the person authorized to make a revision.

(b) The method of submitting revisions (electronic, hard copy, disk, etc.).

(c) A procedure for recording revisions and a system for identifying revised material or text.

(13) Qualifying and surveying non-certificated persons who perform maintenance, preventive maintenance, or alterations for the repair station. A certificated repair station may contract a maintenance function pertaining to an article to a non-certificated person, provided that:

(a) The non-certificated person follows a quality control system equivalent to the system followed by the certificated repair station;

(b) The certificated repair station remains directly in charge of the work performed by the non-certificated person;

(c) The certificated repair station verifies, by testing and/or inspecting, that the work has been performed satisfactorily and that the article is airworthy before approving it for return to service; and

(d) The non-certificated person's contract allows the FAA to inspect or observe work being performed on any articles for the certificated repair station.

**NOTE: The ability to inspect a non-certificated person can only be accomplished while the contract is in force. This requirement**

**does not give ASIs access to non-FAA-certificated facilities if there is no work being performed under contract for a certificated repair station.**

*B.* Where applicable, the manual should contain references to the instructions for continued airworthiness, maintenance manuals, inspection standards, or other approved or accepted data specific to the article being maintained.

*C.* A sample of each of the inspection and maintenance forms used in the performance of maintenance and the instructions for completing those forms.

**NOTE: These forms may be addressed in a separate accepted manual that is submitted to the CHDO and maintained in current condition by the repair station.**

## 9. TASK OUTCOMES.

### *A. Complete PTRS.*

*B. Complete the Task.* Completion of this task will result in the following actions:

(1) If no regulatory conflicts were found, the Flight Standards District Office (FSDO) may send a transmittal document acknowledging receipt of the manuals.

(2) If conflicts with the rule are noted, the principal inspector will detail those discrepancies in writing to the certificate holder.

**NOTE: ASIs may inform the certificate holder that no deficiencies were noted. This should not be mistaken as an “acceptance” of the manuals.**

**NOTE: Federal agencies can no longer refuse electronic versions of manuals, forms, record systems, etc. Federal law prohibits agencies from making the use of electronic media more difficult or from requiring additional steps or procedures for users of electronic media. Therefore, all repair station document submissions must be accompanied by a transmittal document that describes the submission and is signed by the appropriate manager. ASIs will accept or approve submissions with a transmittal document indicating the date; document, manual, or revision number; and an acceptance or approval statement. Additionally, ASIs will**

**reject a certificate holder’s submission using a transmittal document that indicates the date; document, manual, or revision number; and includes a detailed explanation of the discrepancies or non-conformances noted. The acceptance or approval letter should remain with the manual or be kept on file.**

(3) Approving the training program, manual, or a revision to either document by sending the certificate holder a letter indicating the date; document, manual, or revision number; and an acceptance statement. The principal inspector should sign the transmittal document.

**NOTE: A certificate holder using electronic media such as CD-ROM disks, LAN-based manual systems, or internet-based manual systems may scan the cover letters and insert them electronically into the applicable document if they do not wish to maintain a file of acceptance or approval letters.**

*C. Use of Electronic Transmissions (E-mail or Facsimile).* E-mail or fax responses are an acceptable alternative to the cover letter if the repair station is equipped to transmit and receive any necessary attachments. This may include the use of electronic signatures. This method should be addressed in the repair station’s procedures and found acceptable to the FAA.

*D. Rejection.* Reject the manual(s) or revisions by doing the following:

(1) Initiate a cover letter indicating the date and document, manual, or revision number of the document or manual being rejected.

(2) Return all copies to the applicant with an explanation of discrepancies that must be corrected and instructions for resubmitting the documents in order to proceed with the certification or revision process.

*E. Acceptance.* Once the applicant/certificate holder receives the acceptance of the repair station and/or quality control manuals, or the approval of the training program and/or manual, copies of the manuals or disks must be provided to the CHDO. The principal inspector will file a copy in the certificate holder/applicant’s office file along with a copy of the acceptance letter.

(1) In a paper revision, the ASI will remove the affected pages and insert the revised pages in the



manuals or the training program. The ASI will update the manual control system and file the cover letters in the appropriate office file.

(2) In an electronic format, the ASI will replace the outdated disk with the current or initial manual or

training submission. The ASI will place a copy of the acceptance letter in the certificate holder's office file.

*F. Document Task.* File all supporting paperwork in the certificate holder/applicant's office file.

**11. FUTURE ACTIVITIES.** None.